



[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2018-0298; Product Identifier 2017-NM-179-AD; Amendment 39-19488; AD 2018-23-02]**

**RIN 2120-AA64**

**Airworthiness Directives; Airbus SAS Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for all Airbus SAS Model A318 and A319 series airplanes; Model A320-211, A320-212, A320-214, A320-216, A320-231, A320-232, and A320-233 airplanes; and Model A321-111, A321-112, A321-131, A321-211, A321-212, A321-213, A321-231, and A321-232 airplanes. This AD was prompted by reports of missing assembly hardware on the trimmable horizontal stabilizer actuator (THSA). This AD requires repetitive inspections and checks of the lower and upper THSA attachments and applicable related investigative and corrective actions; a one-time inspection of the THSA lower attachment and replacement as applicable; and, for certain airplanes, activation of the electrical load sensing device (ELSD) and concurrent modifications. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For Airbus SAS service information identified in this final rule, contact Airbus SAS, Airworthiness Office – EIAS, Rond-Point Emile Dewoitine No: 2, 31700 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email [account.airworth-eas@airbus.com](mailto:account.airworth-eas@airbus.com); Internet <http://www.airbus.com>.

For United Technologies Corporation Aerospace Systems (UTAS) service information identified in this AD, contact United Technologies Corporation Aerospace Systems (UTAS): Goodrich Corporation, Actuation Systems, Stafford Road, Fordhouses, Wolverhampton WV10 7EH, England; phone: +44 (0) 1902 624938; fax: +44 (0) 1902 788100; email: [techpubs.wolverhampton@goodrich.com](mailto:techpubs.wolverhampton@goodrich.com); Internet: <http://www.goodrich.com/TechPubs>

You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0298.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0298; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3223.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Airbus SAS Model A318 and A319 series airplanes; Model A320-211, A320-212, A320-214, A320-216, A320-231, A320-232, and A320-233 airplanes; and Model A321-111, A321-112, A321-131, A321-211, A321-212, A321-213, A321-231, and A321-232 airplanes. The NPRM published in the Federal Register on April 16, 2018 (83 FR 16251). The NPRM was prompted by reports of missing assembly hardware on the THSA. The NPRM proposed to require repetitive inspections and checks of the lower and upper THSA attachments and applicable related investigative and corrective actions; a one-time inspection of the THSA lower attachment and replacement as applicable; and, for certain airplanes, activation of the ELSD and concurrent modifications.

We are issuing this AD to address uncontrolled movement of the horizontal stabilizer as a result of the latent (undetected) failure of the THSA's primary load path and consequent loss of control of the airplane.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2017-0237, dated December 4, 2017 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for all Airbus SAS Model A318 and A319 series airplanes; Model A320-211, A320-212, A320-214, A320-216, A320-231, A320-232, A320-233 airplanes; and Model A321-111, A321-112, A321-131, A321-211, A321-212, A321-213, A321-231, and A321-232 airplanes. The MCAI states:

The Trimmable Horizontal Stabilizer Actuator (THSA) of Airbus A320 Family aeroplanes has been rig-tested to check secondary load path behaviour in case of primary load path failure. In that configuration, the loads are transferred to the secondary load path, which should jam, preventing any Trimmable Horizontal Stabilizer motion. The test results showed that the secondary load path did not jam as expected, preventing detection of the primary load path failure. To verify the integrity of the THSA primary load path and the correct installation of the THSA, Airbus issued Service Bulletin (SB) A320-27-1164, later revised multiple times, and SB A320-27A1179, and EASA issued AD 2006-0223 [which corresponds to FAA AD 2007-06-02, Amendment 39-14983 (72 FR 12072, March 15, 2007) ("AD 2007-06-02")], AD 2007-0178 [which corresponds to FAA AD 2008-09-16, Amendment 39-15497 (73 FR 24160, May 2, 2008) ("AD 2008-09-16")], AD 2008-0150, and AD 2014-0147, each AD superseding the previous one, requiring one-time and repetitive inspections.

Since EASA AD 2014-0147 was issued, Airbus designed a new device, called Electrical Load Sensing Device (ELSD), to introduce a new means of THSA upper secondary load path engagement detection. Consequently, Airbus issued

several SBs (Airbus SB A320-27-1245, A320-27-1246, and A320-27-1247, depending on aeroplane configuration) providing instructions to install the wiring provision for ELSD installation and to install ELSD on the THSA, and SB A320-27-1248, providing instructions to activate the ELSD. Airbus also revised SB A320-27-1164, now at Revision 13, including instructions applicable for aircraft equipped with ELSD.

Furthermore, following a visual inspection of the THSA, an operator reported that the THSA was found with a bush missing, inducing torqueing of the THSA lower attachment primary bolt against the THSA lug, which resulted in the application of a transverse force on the lug.

Prompted by several other identical findings, Airbus released Alert Operator Transmission (AOT) A27N010-17 to provide instructions for inspection and associated corrective actions.

For the reasons described above, this AD retains the requirements of EASA AD 2014-0147, which is superseded, and requires installation of ELSD on the THSA, ELSD activation, and a one-time inspection to verify the bush presence on the THSA lower attachment.

The unsafe condition is uncontrolled movement of the horizontal stabilizer as a result of the latent (undetected) failure of the THSA's primary load path and consequent loss of control of the airplane.

The required actions include repetitive inspections and checks of the lower and upper THSA attachments and applicable related investigative and corrective actions; a one-time inspection of the THSA lower attachment and replacement as applicable; and, for certain airplanes, activation of the ELSD and concurrent modifications.

Related investigative actions include an inspection of the upper THSA attachment, an inspection of the lower attachment, and a check of the upper and lower

clearance between the secondary nut trunnion and the junction plate. Corrective actions include replacement of the THSA and repair.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0298.

### **Comments**

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Support for the NPRM**

The Air Line Pilots Association, International, stated its support for the NPRM. United Airlines stated that it has no objection to the NPRM.

### **Request to Allow Future Revisions of Service Information**

Delta Air Lines (DAL) requested that the proposed AD allow operators the opportunity to utilize the latest data and instructions available without the need to request an alternative method of compliance (AMOC). DAL proposed that after each reference made to service information in paragraphs (g), (h), (i), (j), (k), (m)(1), and (m)(2) of the proposed AD, the following statement is included:

or using a method approved by the Manager,  
International Section, Transport Standards Branch,  
FAA; or the European Aviation Safety Agency (EASA);  
or Airbus's EASA Design Organization Approval  
(DOA).

DAL noted that the service information has been revised multiple times or has been revised within a short period of time. DAL observed that the statement quoted above is based on language used in paragraph (g) of AD 2018-03-12, Amendment

39-19185 (83 FR 5906, February 12, 2018) (“AD 2018-03-12”), and should be considered as standard wording for future ADs, as applicable.

We disagree with the commenter’s request. We infer that the commenter is requesting a way for operators to comply with the requirements of an AD by using service information revisions that are issued after an AD is published without having to request an AMOC. We may not refer to any document that does not yet exist. In general terms, we are required by Office of the Federal Register (OFR) regulations for approval of materials “incorporated by reference,” as specified in 1 CFR 51.1(f), to either publish the service document contents as part of the actual AD language; or submit the service document to the OFR for approval as “referenced” material, in which case we may only refer to such material in the text of an AD. The AD may refer to the service document only if the OFR approved it for “incorporation by reference.” See 1 CFR part 51. To allow operators to use later revisions of the referenced document (issued after publication of the AD), either we must revise the AD to reference specific later revisions, or operators must request approval to use later revisions as an AMOC with this AD. However, we may consider approving global AMOCs to allow operators to use future revisions of the service information. We reserve the use of the wording requested by the commenter for situations where no service information is available or a service document, such as an aircraft maintenance manual, cannot be incorporated by reference in an AD. Therefore, we have not changed this AD in this regard.

#### **Request to Specify Required Paragraphs in Airbus Alert Operators Transmission**

DAL requested that paragraph (k) of the proposed AD specify only paragraphs 4.2.2 and 4.2.3 of Airbus Alert Operators Transmission (AOT) A27N010-17,

Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17, because, as a whole, the service information contains data that are unrelated to the inspection process. Paragraphs 4.2.2 and 4.2.3 of the service information provide the inspection activities and corrective actions.

We agree with the commenter that the primary instructions for inspection and corrective actions are contained in paragraphs 4.2.2 and 4.2.3 of Airbus AOT A27N010-17, Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17. We have revised paragraph (k) of this AD to require only paragraphs 4.2.2 and 4.2.3 of Airbus AOT A27N010-17, Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17. Note that there is relevant information outside of those two paragraphs, such as references to part numbers, aircraft maintenance manual procedures, and an appendix. Procedures outside of paragraphs 4.2.2 and 4.2.3 can be deviated from, using accepted methods provided in an operator's maintenance or inspection program, provided the required AD actions can be done and the airplane can be put back in service in an airworthy condition.

#### **Request to Modify Language Regarding Contacting the Manufacturer**

DAL noted that paragraph (o) of the proposed AD provides exceptions to two Airbus service information documents - Airbus Service Bulletin A320-27-1164, Revision 13, dated August 8, 2016; and Airbus AOT A27N010-17, Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17, with respect to contacting the manufacturer. DAL proposed that this paragraph be rewritten to state:

Any approved method which specifies to contact the manufacturer: Before further flight, accomplish the corrective actions in accordance with the procedures specified in paragraph (v)(2) of this AD.

We acknowledge the commenter's request to clarify paragraph (o) of this AD. When specifying exceptions to required service information, we are unable to generalize the required documents by stating "any approved method," as requested by the commenter. We must identify the specific service information. Therefore, we have not changed this AD in this regard.

#### **Request for Clarification of Service Information Instructions**

DAL observed that Airbus Service Bulletin A320-27-1245, Revision 00, dated March 6, 2017, indicates multiple configurations for certain aircraft. As an example, DAL pointed out that aircraft manufacturer serial number (MSN) 118 is shown as both configuration 078 and configuration 082. DAL stated the service information does not provide clear guidance on determining if both or only one set of material/instructions is applicable. DAL requested that the service bulletin be revised to clarify the intent of the multiple configurations and how to address them.

We disagree with the commenter's request to revise the service information; however, we agree to clarify. The referenced service information is adequate because different aircraft configurations can be determined based on the type of placard installed. Airbus Service Bulletin A320-27-1245, Revision 00, dated March 6, 2017, provides airplane configuration definitions in paragraph 1.A.(5), "Configuration Definition," of the "Planning Information" section. According to the configuration definition, configuration 078 has placard 33LM PN D11311117A00 installed and configuration 082 has placard 33LM PN 002051-09 installed. Once the placard installation is determined, an operator can follow the instructions based on each respective configuration. We have not changed this AD in this regard.

### **Request for One Comprehensive AD to Address THSA System**

DAL noted that the Model A319, A320, and A321 THSA system has had a continually complicated maintenance and regulatory history. The THSA system has been subject to numerous ADs throughout the years that address numerous individual shortcomings. The proposed AD encompasses several different aspects (inspections and alterations), yet there are still other regulatory actions such as the replacement of No-Back Brake components or overhaul restrictions, which complicate the operators' maintenance activities. DAL requested that future regulatory actions related to the system be reviewed with a goal of providing a singular, coordinated over-arching regulatory and maintenance requirement.

We agree that there have been several ADs issued on the THSA system addressed in this AD, and we acknowledge the commenter's concerns. We understand that the EASA and the airplane manufacturer are making an effort to combine as many THSA issues as possible into a single rulemaking action to simplify the THSA requirements. In response to their efforts, we may consider additional rulemaking in the future to simplify the THSA requirements. However, at this time, we are issuing this final rule AD to address the specified unsafe condition. No change has been made to this AD in this regard.

### **Request to Refer to Revised Service Information**

Airbus noted that two of the service bulletins referred to in the NPRM were revised and requested that the revised service bulletins be referred to in the final rule. The current revision levels are Airbus Service Bulletin A320-27-1164, Revision 14, dated

January 16, 2018; and Airbus Service Bulletin A320-27-1248, Revision 01, dated April 16, 2018.

We agree with the commenter's request. In the NPRM we referred to Airbus Service Bulletin A320-27-1164, Revision 13, dated August 8, 2016; and Service Bulletin A320-27-1248, Revision 00, dated March 6, 2017. Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018, includes clarifications regarding reporting inspection results but does not change the proposed reporting requirements of the NPRM and otherwise adds no substantive changes compared with the previous version. Airbus Service Bulletin A320-27-1248, Revision 01, dated April 16, 2018, clarifies the instructions, but adds no substantive changes compared with the previous version. We have therefore revised the "Related Service Information under 1 CFR part 51" paragraph in this final rule to refer to Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018; and Airbus Service Bulletin A320-27-1248, Revision 01, dated April 16, 2018. We have also revised paragraphs (g), (h), (i), (j), and (o)(1) of this AD to refer to Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018. In addition, we revised paragraph (m) of this AD to refer to Airbus Service Bulletin A320-27-1248, Revision 01, dated April 16, 2018.

Furthermore, we revised paragraph (s), "Credit for Previous Actions," of this AD to include Airbus Service Bulletin A320-27-1164, Revision 13, dated August 8, 2016; and Service Bulletin A320-27-1248, Revision 00, dated March 6, 2017. Specifically, we revised paragraph (s)(1) to provide credit for actions done before the effective date of this AD using Airbus Service Bulletin A320-27-1164, Revision 10, dated March 27, 2014; Revision 11, dated December 15, 2014; Revision 12, dated March 23, 2016; or

Revision 13, dated August 8, 2016. We also added paragraph (s)(3) to this AD to provide credit for actions required by paragraph (m)(1) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-27-1248, Revision 00, dated March 6, 2017. We redesignated subsequent paragraphs of this AD accordingly.

### **Request to Supersede Affected ADs**

Airbus requested that the FAA consider aligning with EASA's decision of superseding affected ADs instead of keeping the obsolete ADs active. We infer that Airbus is requesting that we supersede AD 2007-06-02 and AD 2008-09-16 instead of issuing this stand-alone AD that terminates the requirements of AD 2007-06-02 and AD 2008-09-16.

We acknowledge the commenter's request. Although paragraph (u) of this AD states "Accomplishing the initial actions required by paragraphs (g) and (h) of this AD, and accomplishing the applicable actions required by paragraphs (i) and (j) of this AD, terminates all requirements of AD 2007-06-02 and AD 2008-09-16," it does not supersede those ADs. The purpose of issuing stand-alone AD actions is to reduce the complexity involved with superseding certain ADs. After certain compliance times in this AD have passed, we may consider rescinding AD 2007-06-02 and AD 2008-09-16 since they are terminated by certain actions in this AD. In addition, if we converted this AD to a supersedure, we would need to issue another notice for public comment, which would further delay issuance of this final rule. Therefore, we have not changed this AD in this regard.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

#### **Related Service Information under 1 CFR part 51**

Airbus has issued Alert Operators Transmission (AOT) A27N010-17, Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17. This service information describes the procedure for a one-time general visual inspection of the THSA lower attachment to measure the gap between the THSA lower attachment tab washer and attachment plates and replacement of the THSA lower attachment if the measured gap is less than 0.5 mm. The replacement includes doing an inspection of the THSA parts to confirm the bushing is missing and applicable corrective actions (i.e., repair).

Airbus has also issued Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018. This service information describes procedures for a general visual inspection of the upper THSA attachment for correct installation, cracks, damage and metallic particles; a general visual inspection of the lower and upper THSA attachments

for correct installation; a check of the clearance between secondary nut trunnions and junction plates and correct installation of the lower THSA attachment; a general visual inspection of the THSA ball screw to check for the absence of dents; and applicable related investigative and corrective actions.

In addition, Airbus has issued Service Bulletin A320-27-1245, Revision 00, dated March 6, 2017. This service information describes the procedure to modify the wiring provisions for the ELSD.

Airbus has also issued Service Bulletin A320-27-1246, Revision 01, dated November 4, 2016. This service information describes the procedures to adapt the wiring provision of the ELSD and THSA to accommodate the correct installation of the ELSD.

Airbus has issued Service Bulletin A320-27-1247, Revision 00, dated March 6, 2017. This service information describes the procedure to modify the upper attachment secondary load path of the THSA to accommodate the correct installation of the ELSD.

Airbus has issued Service Bulletin A320-27-1248, Revision 01, dated April 16, 2018. This service information describes the procedure to activate the ELSD.

UTAS has issued United Technologies Corporation (UTC) Aerospace Systems Repair Instructions RF-DSC-1361-17, Version 00, including Appendix A, dated May 24, 2017. This service information describes the repair instructions to follow if the bushing is missing, as specified in AOT A27N010-17, Revision 01, dated October 17, 2017.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Costs of Compliance**

We estimate that this AD affects 1,180 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

**Estimated costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Inspections, check, activation, and modifications	Up to 59 work-hours X \$85 per hour = \$5,015	Up to \$15,353	Up to \$20,368	Up to \$24,034,240
Reporting	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$100,300

We estimate the following costs to do any necessary replacements that would be required based on the results of the inspections. We have no way of determining the number of aircraft that might need this replacement:

**On-condition costs**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Replacement	11 work-hours X \$85 per hour = \$935	\$240,000	\$240,935

We have received no definitive data that would enable us to provide cost estimates for the on-condition repairs specified in this AD.

**Paperwork Reduction Act**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The

paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave., SW, Washington, DC 20591, ATTN: Information Collection Clearance Officer, AES-200.

#### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has

delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**2018-23-02 Airbus SAS:** Amendment 39-19488; Docket No. FAA-2018-0298; Product Identifier 2017-NM-179-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD affects AD 2007-06-02, Amendment 39-14983 (72 FR 12072, March 15, 2007) (“AD 2007-06-02”); and AD 2008-09-16, Amendment 39-15497 (73 FR 24160, May 2, 2008) (“AD 2008-09-16”).

#### **(c) Applicability**

This AD applies to Airbus SAS Model A318-111, A318-112, A318-121, and A318-122 airplanes; Model A319-111, A319-112, A319-113, A319-114, A319-115, A319-131, A319-132, and A319-133 airplanes; Model A320-211, A320-212, A320-214, A320-216, A320-231, A320-232, and A320-233 airplanes; and Model A321-111, A321-112, A321-131, A321-211, A321-212, A321-213, A321-231, and A321-232 airplanes; certificated in any category, all manufacturer serial numbers.

**(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight controls.

**(e) Reason**

This AD was prompted by reports of missing assembly hardware on the trimmable horizontal stabilizer actuator (THSA). We are issuing this AD to address uncontrolled movement of the horizontal stabilizer as a result of the latent (undetected) failure of the THSA's primary load path and consequent loss of control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Repetitive Actions: Lower THSA Attachment**

Before exceeding 20 months since airplane first flight, or since airplane first flight following last THSA replacement, or within 20 months after the last inspection of the lower THSA attachment as specified in the instructions of Airbus Service Bulletin A320-27-1164, Revision 02 up to Revision 09, whichever occurs latest, do the actions specified in paragraphs (g)(1), (g)(2), and (g)(3) of this AD concurrently, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018. Repeat the actions thereafter at intervals not to exceed 20 months.

(1) Check the clearance between the secondary nut trunnions and the junction plates at the lower THSA attachment.

(2) Do a general visual inspection of the lower THSA attachment for correct installation of attachment parts.

(3) Do a general visual inspection of the THSA ball screw for dents.

**(h) Repetitive Inspections: Upper THSA Attachment**

Before exceeding 10 months since airplane first flight, or since airplane first flight following last THSA replacement, or within 10 months after the last inspection of the upper THSA attachment as specified in the instructions of Airbus Service Bulletin A320-27-1164, Revision 02 up to Revision 09, whichever occurs latest, do the actions specified in paragraphs (h)(1) and (h)(2) of this AD concurrently, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018. Repeat the inspections thereafter at intervals not to exceed 10 months.

(1) Do a general visual inspection of the upper THSA attachment for correct installation, cracks, damage, and metallic particles.

(2) Do a general visual inspection of the upper THSA attachment for correct installation of attachment parts.

**(i) Related Investigative and Corrective Actions**

If, during any action required by paragraph (g) or (h) of this AD, any discrepancy is detected (e.g., any installation deviation, cracking, damage, metallic particles, or dent is found), before further flight, accomplish all applicable related investigative and corrective actions in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018; except as required by paragraph (o)(1) of this AD.

**(j) Reporting Requirements for Actions Required by Paragraphs (g) and (h) of this AD**

In case of any findings during any action required by paragraph (g) or (h) of this AD, report the inspection results to Airbus SAS using the applicable "Inspection

Reporting Sheet” of Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018, at the applicable time specified in paragraph (j)(1) or (j)(2) of this AD. If operators have reported findings as part of obtaining any corrective actions approved by the EASA Design Organization Approval (DOA), operators are not required to report those findings as specified in this paragraph.

(1) If the inspection or check was done on or after the effective date of this AD: Submit the report within 30 days after the inspection.

(2) If the inspection or check was done before the effective date of this AD: Submit the report within 30 days after the effective date of this AD.

**(k) One-Time Inspection and Replacement**

For airplanes on which the THSA has been replaced or reinstalled since the date of issuance of the original certificate of airworthiness, or the date of issuance of the original export certificate of airworthiness: Within 6 months after the effective date of this AD, accomplish a detailed inspection of the THSA lower attachment gap clearances, in accordance with paragraphs 4.2.2 and 4.2.3 of Airbus Alert Operators Transmission (AOT) A27N010-17, Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17. If the measured gap is less than 0.5 mm, before further flight, replace the THSA, including doing an inspection of the THSA parts to confirm the bushing is missing and applicable corrective actions, in accordance with the instructions of Airbus AOT A27N010-17, Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17; and United Technologies Corporation (UTC) Aerospace Systems Repair Instructions RF-DSC-1361-17, Version 00, including Appendix A, dated May 24, 2017, as applicable, except as required by paragraph (o)(2) of this AD.

**(l) Definition of Groups**

For the purpose of this AD: Group 1 airplanes are those that, on the effective date of this AD, do not have the electrical load sensing device (ELSD) activated. Group 2 airplanes are those that, on the effective date of this AD, have the ELSD activated.

**(m) Activation and Concurrent Modification**

For Group 1 airplanes (see paragraph (l) of this AD): Do the actions specified in paragraphs (m)(1) and (m)(2) of this AD.

(1) Within 4 years after the effective date of this AD, activate the ELSD of the THSA on the airplane, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1248, Revision 01, dated April 16, 2018.

(2) Concurrently with or before the activation of the ELSD required by paragraph (m)(1) of this AD, modify the airplane, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1245, Revision 00, dated March 6, 2017; or Airbus Service Bulletin A320-27-1246, Revision 01, dated November 4, 2016; as applicable.

**(n) Concurrent Requirement for Airplanes Equipped with THSAs that do not have ELSDs**

For an airplane equipped with a THSA having a part number listed in figure 1 to paragraphs (n), (p), and (q) of this AD: Concurrently with or before the activation required by paragraph (m)(1) of this AD, modify the airplane, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1247, Revision 00, dated March 6, 2017.

**Figure 1 to paragraphs (n), (p), and (q) of this AD: Part Numbers for THSAs without ELSDs**

47145-021	47145-140
47145-030	47145-141
47145-031	47145-142
47145-032	47145-143
47145-033	47145-144
47145-034	47145-145
47145-035	47145-146
47145-036	47145-147
47145-037	47145-148
47145-050	47145-150
47145-051	47145-151
47145-052	47145-152
47145-053	47145-153
47145-054	47145-154
47145-055	47145-155
47145-056	47145-156
47145-057	47145-157
47145-121	47145-160
47145-130	47145-161
47145-131	47145-162
47145-132	47145-163
47145-133	47145-164
47145-134	47145-165
47145-135	47145-166
47145-136	47145-167
47145-137	47145-168

**(o) Exceptions to Service Information**

(1) Where Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018, specifies to contact Airbus SAS for appropriate action, and specifies that action as “RC” (Required for Compliance): Before further flight, accomplish corrective actions in accordance with the procedures specified in paragraph (v)(2) of this AD.

(2) Where Airbus AOT A27N010-17, Revision 01, dated October 17, 2017, specifies to contact Airbus SAS for appropriate action: Before further flight, accomplish

corrective actions in accordance with the procedures specified in paragraph (v)(2) of this AD.

**(p) Parts Installation**

Do not install on any airplane a THSA with a part number listed in figure 1 to paragraphs (n), (p), and (q) of this AD and do not deactivate the ELSD at the times specified in paragraph (p)(1) or (p)(2) of this AD, as applicable.

(1) Group 1 airplanes (see paragraph (l) of this AD): After modification of the airplane as required by paragraph (m)(1) of this AD.

(2) Group 2 airplanes (see paragraph (l) of this AD): From the effective date of this AD.

**(q) Method of Compliance**

An airplane on which Airbus SAS Modification 155955 has been embodied in production is considered compliant with paragraphs (m)(1), (m)(2), and (n) of this AD, provided that it is determined that no THSA with a part number listed in figure 1 to paragraphs (n), (p), and (q) of this AD is installed on that airplane, and that the ELSD remains activated. A review of airplane maintenance records is acceptable to make this determination, provided those records can be relied upon for that purpose.

**(r) Airplanes Not Affected by the Requirements of Paragraph (k) of this AD**

The inspection required by paragraph (k) of this AD is not required for airplanes on which the THSA has been installed, as specified in the instructions of Airbus A320 Airplane Maintenance Manual (AMM) 27-44-51-400-001, dated May 2017, or subsequent.

**(s) Credit for Previous Actions**

(1) This paragraph provides credit for the initial actions required by paragraphs (g), (h), (i), and (j) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-27-1164, Revision 10, dated March 27, 2014; Revision 11, dated December 15, 2014; Revision 12, dated March 23, 2016; or Revision 13, dated August 8, 2016.

(2) This paragraph provides credit for actions required by paragraph (k) of this AD, if those actions were performed before the effective date of this AD using Airbus AOT A27N010-17, dated March 27, 2017.

(3) This paragraph provides credit for actions required by paragraph (m)(1) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-27-1248, Revision 00, dated March 6, 2017.

(4) This paragraph provides credit for actions required by paragraph (m)(2) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-27-1246, dated March 20, 2015.

**(t) No Terminating Action for Repetitive Inspections in this AD**

Accomplishment on an airplane of the one-time inspection and replacement, as applicable, specified in paragraph (k) of this AD and the modifications specified in

paragraphs (m)(1), (m)(2), and (n) of this AD, as applicable, do not constitute terminating action for the repetitive inspections required by paragraphs (g) and (h) of this AD for that airplane.

**(u) Terminating Action for Other FAA ADs**

Accomplishing the initial actions required by paragraphs (g) and (h) of this AD, and accomplishing the applicable actions required by paragraphs (i) and (j) of this AD, terminate all requirements of AD 2007-06-02 and AD 2008-09-16.

**(v) Other FAA AD Provisions**

The following provisions also apply to this AD:

*(1) Alternative Methods of Compliance (AMOCs):* The Manager, International Section, Transport Standards Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Section, send it to the attention of the person identified in paragraph (x)(2) of this AD. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

*(2) Contacting the Manufacturer:* For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or

the European Aviation Safety Agency (EASA); or Airbus SAS's EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

*(3) Paperwork Reduction Act Burden Statement:* A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 1 hour per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

*(4) Required for Compliance (RC):* Except as specified in paragraph in (o)(1) of this AD, if any service information contains procedures or tests that are identified as RC, those procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

**(w) Special Flight Permits**

Special flight permits, as described in Section 21.197 and Section 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199), are not allowed.

**(x) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2017-0237, dated December 4, 2017, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0298.

(2) For more information about this AD, contact Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th Street, Des Moines, WA 98198; phone and fax: 206-231-3223.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (y)(3) and (y)(5) of this AD.

**(y) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Airbus Alert Operators Transmission (AOT) A27N010-17, Revision 01, dated October 17, 2017, including AOT Appendix\_A27N010-17.

(ii) Airbus Service Bulletin A320-27-1164, Revision 14, dated January 16, 2018.

(iii) Airbus Service Bulletin A320-27-1245, Revision 00, dated March 6, 2017.

(iv) Airbus Service Bulletin A320-27-1246, Revision 01, dated November 4, 2016.

(v) Airbus Service Bulletin A320-27-1247, Revision 00, dated March 6, 2017.

(vi) Airbus Service Bulletin A320-27-1248, Revision 01, dated April 16, 2018.

(vii) United Technologies Corporation Aerospace Systems (UTAS) United Technologies Corporation (UTC) Aerospace Systems Repair Instructions RF-DSC-1361-17, Version 00, including Appendix A, dated May 24, 2017.

(3) For Airbus SAS service information identified in this AD, contact Airbus SAS, Airworthiness Office – EIAS, Rond-Point Emile Dewoitine No: 2, 31700 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email [account.airworth-eas@airbus.com](mailto:account.airworth-eas@airbus.com); Internet <http://www.airbus.com>.

(4) For United Technologies Corporation Aerospace Systems service information identified in this AD, contact United Technologies Corporation Aerospace Systems: Goodrich Corporation, Actuation Systems, Stafford Road, Fordhouses, Wolverhampton WV10 7EH, England; phone: +44 (0) 1902 624938; fax: +44 (0) 1902 788100; email: [techpubs.wolverhampton@goodrich.com](mailto:techpubs.wolverhampton@goodrich.com); Internet: <http://www.goodrich.com/TechPubs>.

(5) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(6) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Des Moines, Washington, on October 24, 2018.

Michael Kaszycki,  
Acting Director,  
System Oversight Division,  
Aircraft Certification Service.

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